

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Goss International

New Hampshire Manufacturing Extension Partnership

Continuous Improvement in the Headlines for Goss International

Client Profile:

Goss International (formerly Goss Printing Press Company) introduced the first straight-line newspaper press in 1892 and has expanded to manufacture binding, sorting and inserting machines for the magazine and newspaper industries, as well as the presses that print the publications. Goss International has locations in Dover and Durham, New Hampshire and several other U.S. states as well as in many other countries. The company employs 140 people at its facility in Durham, New Hampshire.

Situation:

Goss International had been implementing Lean for a number of years and were using 5S, which entails cleaning, repairing, and organizing the machinery and work areas. Company management wanted to learn about other Lean tools as they continued with their Lean transformation and contacted the New Hampshire Manufacturing Extension Partnership (NHMEP), a NIST MEP network affiliate, for help.

Solution:

NHMEP conducted Time Wise LE102 training, a program that introduces basic Lean concepts through a one-day session that is half classroom and half hands-on simulation. Next, NHMEP project managers, Christopher Tsakiris and David Hess, taught Goss teams about Cellular Flow, Value Stream Mapping (VSM) and using Kaizen methods to address areas of waste and inefficiency in their processes. The primary focus area was the newspaper hopper process. Newspaper hoppers are devices that are loaded with store fliers and other preprinted material that needs to be slid inside a newspaper (like the inserts in the Sunday paper). Fliers are loaded into the pockets of the hopper and are inserted automatically one by one as the newspapers pass by. Each of the hoppers has its own individual electronics and all are synchronized so if that particular insert is missed, it "knows" that the paper needs to come by that one hopper again for the missing insert. After mapping the value streams to see how the people, work and product traveled in the hopper area, it was decided that configuring a cell here would significantly improve the work flow. Tsakiris and Hess assisted the team in learning about cellular operation by demonstrating how well it worked as they put it to use in the newspaper hopper. Since then, members of the original team have taught employees from other areas and are using the Lean techniques to make positive improvements all over the facility.

A second phase of the process was to revisit the hopper cell project a few months later to reassess and make any necessary adjustments after it had been up and running for a while. For the NP 30 Hopper, the sub assemblies used to be in one area of the plant and had to be transported across the plant to where they were needed. Sub assembly was subsequently moved and has been integrated with the entire assembly process. The employee team was also cross trained and able to work on several of the assembly processes as needed. Value Stream Maps were done for each of three assembly areas since each is an internal customer of the other and interrelated. Resulting Kaizen work

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was performed so everyone learned the process.

Goss is beginning to reap the rewards of their strategic continuous improvement plan. Materials, tools and storage areas are color coded. Visuals are being used throughout the plant and work procedures, photos and drawings of what is being built so those teams involved can prepare. These also give employees order number and work in process number so they know how to charge their time for each job. Display boards indicate 6S goals and show photos of how things should look in the area. Daily audits of the tool boards by group leader, weekly audits by supervisors and monthly audits by management help sustain changes. Cross training has allowed all employees to see where they fit into the process. Work is on rolling carts and can be taken to the people who have the time to do it. Kitting is being done by group leaders and other assemblers. The process was not eliminated because mapping and running tests during Kaizen events helped determine that some kitting was necessary and how much material should be on hand for each process. For the NP30 Hopper, instead of making a kit for an entire order which included sub assemblies, they are taking a portion of the parts (which varies according to the job) and stage these at point of use storage (POUS). They also stage sub assembly at POUS. Visuals signals tell them when to replenish (replenishment is done by kitters). They are using one-piece flow (the pull system) within the cell and have seen great benefit. The work travels from sub assembly to sheet metal assembly to final assembly to test. Racks were relocated so materials are now kept in the areas where they are used. These changes have brought about a dramatic decrease in labor hours now that things have been organized and cleaned and are more efficient.

Results:

- * Reduced production time 3.4 hours to 1.82 hours.
- * Reduced standard time by 35 percent.
- * Reduced floorspace by 30 percent.
- * Invested in workforce training.
- * Initiated factory tours.

Testimonial:

"Lean is great because you flow the products, you can see problems in the flow, and you know you have issues that need to be dealt with."

Bob Benoit, Assembly Manager